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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,953	03/22/2005	Roger Krahenbuhl	0115-050642	9157
28289 7590 02/01/2007 THE WEBB LAW FIRM, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219			EXAMINER PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/01/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/528,953

Applicant(s)

KRAHENBUHL ET AL.

Examiner

Sung H. Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/06/2006 has been entered.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kandpal et al (US 5,108,167).

Kandpal reference discloses an optical device with all the limitations set forth in the above-mentioned claims, including: a connector for the detachable connection of at least one optical waveguide to at least one optoelectronic component, wherein the optical waveguide includes a fiber-optic plug connector ('38' Fig. 2); the connector includes a base part ('30' Fig. 2), which is fastened on the surface of the support ('20' Fig. 2) surrounding the optoelectronic component ('26' Fig. 2); whereby the base part only

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partially covers the surface of the support (Fig. 2); and which has a through hole for optical signals to be exchanged between the optoelectronic component and the optical waveguide (hole is occupied by element '32' in Fig. 2); and a coupling part ('110' Fig. 8) which is exclusively mounted to the base part (Fig. 8 shows that although certain portion of '110' overhangs the support '20', but it is actually mounted, i.e. contacts, "L" shaped lip of element '30'), facing outward and which has an insertion opening ('114' Fig. 8) for the insertion of the fiber-optic plug connector;

wherein the base part comprises a plate which extends transversely to the direction of insertion of the fiber-optic plug (the flange portion of element '30' in Fig. 2- located adjacent to element '32'), which can be connected on one side to the coupling part and which has on the other side an adapter (the lip portion of '30' that is "L" shaped and contacting the support '20') with which the base part can be placed onto the support;

wherein the fiber-optic plug further includes a ferrule in which the optical waveguide ends ('40' Fig. 2; column 5 line 55); a ferrule holder for receiving the ferrule when the plug connector is inserted on the base part, the ferrule holder provided on the side of the plate opposite the adapter ('116' Fig. 8);

wherein the ferrule holder protrudes into the coupling part (Fig. 8);

further including a lens for focusing light rays passing between the optoelectronic component and the optical waveguide, arranged at the entry of a through hole ('32' Fig. 2; Fig. 1);

wherein the adaptor is formed in a hollow-cylindrical manner (Fig.8).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25-31, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kandpal et al (US 5,108,167).

Kandpal reference discloses an optical device as discussed above, however it does not explicitly teach the use of a one-piece insert inserted through a separate plate component. However, the use of additional 'plate' or flange component is well known and common in the optoelectronic package art. Such plate or flange component connected to the ferrule holder element is considered advantageous and desirable in the art because it allows for precise, accurate alignment and mechanical coupling of fiber optic plug with optoelectronic housing. Therefore it would have been obvious to a

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person of ordinary skill in the art at the time the invention was made to modify the device of Kandpal to have a separate plate element coupled with the one-piece insert for better optical plug coupling.

Regarding claim 39, Kandpal reference discloses an optical device as discussed above, however it does not explicitly teach the use of a VCSEL as the light emitting laser. On the other hand, VCSELs are well known and common in the art. VCSELs are advantageously used because it has the ability to produce circular, low-divergence output beam in perpendicular direction, which simplifies or even eliminates the need for complicated light focusing optics in many applications. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Kandpal to have VCSEL as the light emitting laser.

Claims 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kandpal et al (US 5,108,167) in view of DeAndrea et al (US 5,708,743).

Kandpal reference discloses an optical device as discussed above. However, it does not explicitly teach the use of a hemispherical lens that simultaneously orthogonally deflects and focuses the light rays such that through hole and insertion holes run parallel to the support, as claimed in the instant application.

On the other hand, DeAndrea reference discloses a connector for detachable connection of at least one optical waveguide to at least one optoelectronic component which is arranged on the surface of the support, and which has an optical axis perpendicular to the support (Fig. 13); wherein: the optical waveguide includes a fiber-

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optic plug connector (column 2 lines 49-63); the connector includes a base part which is fastened on the surface of the support ('150' Figs. 13-14); surrounding the optoelectronic component ('30' Fig. 13-14); and which has a through hole for optical signal to be exchanged between the optoelectronic component and the optical waveguide ('125' Fig. 13; '175' Fig. 14); and a coupling part ('40/70' Fig. 13-14) which is coupled to the base part facing outward and which has an insertion opening ('76' Fig. 13-14) for the insertion of the fiber optic plug connector;

wherein the base part comprises a plate ('80, 81' Fig. 13) which extends transversely to the direction of the insertion of the fiber optic plug, which can be connected on one side to the coupling part and which has on the other side an adapter ('100' Fig. 13) with which the base part can be placed onto the support;

wherein the plate of the base part is arranged perpendicular to the support (Fig. 13); the through hole and the insertion opening runs parallel to the circuit board (Fig. 13); and the connector further includes means for the orthogonal deflection of the light rays passing between the optoelectronic component and the optical waveguide in the adapter ('310' Fig. 12-13);

wherein the deflecting means includes a hemispherical lens ('340' Fig. 12) and a planar reflecting surface ('310' Fig. 12).

DeAndrea reference explicitly teaches that such configuration is advantageous and desirable in the art because it allows for densely packed parallel arrangements of circuit boards (column 1 lines 27-45). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of

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Kandpal to have a hemispherical lens that simultaneously orthogonally deflects and focuses the light rays such that through hole and insertion holes run parallel to the support, as claimed in the instant application.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak  
Primary Patent Examiner  
Art Unit 2874